Rhynchosia simplicifolia (Walt.) Wood, var. **intermedia** (T. & G.), comb. nov.

Rhynchosia tomentosa β intermedia T. & G., N. Amer. Fl. 1: 285. 1838; *R. intermedia* (T. & G.) Small, Man. Southeastern Flora 715. 1933.

Phaseolus neglectus, sp. nov.

Herba volubilis; stipulis lineari-oblongis, 3–5 nerviis, 5–6 mm longis, rigidis; stipellis lineari-oblongis, 2–3 mm longis; foliolis deltoideo-acuminatis vulgo plus minusve lobatis; pedunculis 5–11 cm longis: bracteis persistentibus, rigidis, 6–9 mm longis, 5-nerviis, subtus plerumque pilosis: pedicellis tenuibus glabratis; bracteolis caducis, uninerviis; calyce campanulato-cupuliformi; corolla 20 mm longa; vexillo obovato, valde emarginato; alis orbiculari-ovatis; ovario dense piloso.

Herbaceous vine; stems slender, sparsely puberulous with reflexed hairs to glabrate; stipules linear-oblong, 3–5 nerved, 5–6 mm long, rigid; petioles puberulous to glabrate, 3–6 cm long; stipels linear-oblong, rigid, 2–3 mm long; leaflets 3, membranaceous, deltoid-acuminate, sparsely puberulent above, glabrous to sparsely puberulent beneath, 2–6 cm long, 2–4.5 cm wide, lobed (often only shallowly so or even entire), the median 3-lobed, the lateral 2-lobed, the lobes round-ovate and generally shallow; peduncles slender, 5–11 cm long, 11–25-flowered; bracts persistent, green, lanceolate-acuminate, firm, 5-nerved, generally more or less pilose beneath, sparingly so to glabrate above, 6–9 mm long, 1–1.5 mm wide at base; pedicels slender, glabrate, 3.5–5 mm long; bracteoles caducous, green, narrowly linear-lanceolate, one-nerved, glabrous, 2–2.5 mm long; calyx campanulate-cupuliform, 2.5–3.5 (lower lip up to 5) mm long, very sparingly ciliolate, the lower lip irregularly pilose, prominently 3–lobed with median lobe 2.5 mm long, acute, upper lip very shallowly 2–lobed; corolla 20 mm long, pale salmon to light blue; standard obovate, 16 mm long, 12 mm wide, deeply emarginate, the upper half reflexed; wings orbicular-ovate, abruptly contracted into a broad claw, its lower half adnate to the keel; keel tubular, with two complete coils; free stamen with a reniform enlargement above the base; style-beard extending around the first coil; stigma lateral; ovary linear, densely pilose.

Nuevo León, Mexico in oak woods along trail up Sierra de la Cebolla from La Trinidad, Municipio de Montemorelos, *C. H. Muller* 2881, Aug. 20, 1939 (TYPE—U. S. National Arboretum Herbarium).

Nearest allied to *Phaseolus foliaceus* Piper, of the Sierra Madre. From this it differs in its longer, linear-oblong, rather than triangular-lanceolate stipules; its 5-nerved, linear-lanceolate bracts which are pilose below; its shallowly lobed leaflets; longer peduncles bearing racemes with more numerous flowers; campanulate-cupuliform calyx which is almost imperceptibly ciliolate; corolla 20, rather than 10, mm long; obovate, deeply emarginate standard; and orbicular-ovate wings.

MYCOLOGY.—*Two new species of* Physarum.[1]

G. W. MARTIN, State University of Iowa.

The two species of *Physarum* here noted were included in the extensive collections of Myxomycetes made by William Bridge Cooke on Mount Shasta, Calif., and submitted by him for identification. One of them proves to be identical with two old collections from Mount Rainier, Wash., which have been in this laboratory for many years awaiting determination. Both appear to be clearly distinct from any recognized species in this large genus.

[1] Received November 5, 1947.

Physarum rubronodum, sp. nov.

Sporangiate, globose to obovate or pulvinate, sessile or borne on weak, strandlike stalks produced as extensions of the hypothallus, pinkish brown, or dark when lime is scanty in peridium, 1–1.5 mm in diameter, densely clustered on a common hypothallus; peridium double, the outer layer cartilaginous, calcareous, shining, crustose, smooth except for a coarse overlying reticulation or, when lime is scanty, dark and lacking the reticulation, the inner layer membranous, closely applied, colorless,

iridescent; hypothallus prominent, silvery to yellow, venose, the veins often projecting as stalk-like extensions on which sporangia are borne; capillitium profuse, close-meshed, bearing large fusiform or irregularly angular scarlet or pinkish nodes, most of the junctions limeless; spores nearly black in mass, dark violaceous brown by transmitted light, slightly paler on one side, densely and somewhat ir-

FIG. 1.—*Physarum rubronodum*. Left, group of sporangia (*Cooke* 15671a) on hypothallus, ×12; right, detail of capillitium with two spores (*Cooke* 18126), ×520; above, spore of same, ×1,000.

regularly verrucose, globose, 11–13μ in diameter, or oval and correspondingly longer and narrower. Plasmodium scarlet or orange-red.

Sporangiis globosis vel obovatis vel pulvinatis, sessilis vel substipitatibus, miniato-brunneis, 1–1.5 mm diam., dense caespitosis sub hypothallo commune; peridio duplici, extus cartilagineo, calcareo, crustaceo, nitente, laeve praeter crasso reticulato; intus membranaceo, applicato, hyalino, iridescente; capillitio denso e filamentis hyalinis reticulato-anastomosatis, nodulis calcareis, magnis, fusiformibus vel irregulariter angularibus, coccineis vel miniatis multis axillis ecalcareix; sporis globosis vel subovoideis, atropurpureo-brunneis crebro grosseque tuberculatis 11–13μ diam. Plasmodio coccineo vel aurantiaco.[2]

CALIFORNIA: Mount Shasta, 8,000 feet, elev., July 7, 1941, *W. B. Cooke* 15671a, TYPE. Same locality, June 29, 1947, *W. B. Cooke* 18126.

Physarum rubronodum is obviously close to *P. albescens* Macbr. Like that species, it has a crustose outer wall suggesting *Leocarpus*, and many of the sporangia are borne on strandlike extensions of the hypothallus. It differs in the pinkish-brown or dark peridium, in the striking scarlet nodes, in the somewhat smaller, warted rather than spiny spores, and in the scarlet or deep orange-red plasmodium.

[2] I am indebted to Sister Mary Cecelia Bodman for assistance with the Latin diagnoses.

Physarum auripigmentum, sp. nov.

Sporangiate, stalked, gregarious; sporangium globose, 0.4–0.6 mm in diameter, total height 0.6–1 mm., clear to opaque yellow (about lemon-chrome of Ridgway); peridium membranous, closely covered by subcircular limy scales; dehiscence somewhat petaloid; columella none; stalk short, about half the diameter of the sporangium, cylindrical, expanded at the base, orange-red, limeless, translucent; hypothallus scarcely evident; capillitium dense, delicate, persistent, the nodes small, rounded, bright yellow, many of the junctions limeless and with numerous free, pointed ends; spores dark brown in mass, clear violet-brown by transmitted light, nearly smooth, (8.5–) 9.5-11 (–12.5)μ in diameter, Plasmodium unknown.

Sporangiis stipitatibus, gregariis, globosis, 0.4–0.6 mm diam., totis 0.6–1 mm altis, lucidis haud pellucidis luteis; peridiis membranaceis, squamis suborbiculatis calcareis applicatis; subfloriforme dehiscentibus; columella nulla; stipes brevis, attingens dimidium diametrosis sporangii, cylindraceus, expansus basi, aurantiacus, ecalcareus, translucidus; hypothallo quo

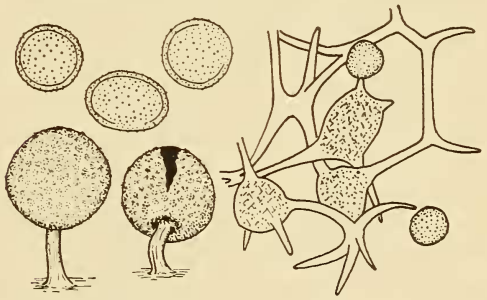

FIG. 2.—*Physarum auripigmentum* (*Cooke* 20099). Left below, two sporangia, ×60; right, detail of capillitium, with two spores, ×520; left, above, three spores, ×1,000.

vix sentiri; capillitio denso, delicato, persistente, nodulis parvulis rotundatis, luteis, multis axillis ecalcareis, apicibusque multiplicibus, apertis, acutis; sporis atro-brunneis, violaceo-brunneis pellucente, sublevibus, 9.5–11μ diam. Plasmodio ignoto.

CALIFORNIA: Mount Shasta, 8,000 feet elev., June 23, 1947, *W. B. Cooke* 20099, TYPE.

WASHINGTON: Longmire Springs, Mount Rainier, August 10–17, 1928, *D. B. Creager* S. U. I. 1722; Paradise Valley, Mount Rainier, August, 10–17, 1928, *D. B. Creager* S. U. I. 1723.

Physarum auripigmentum suggests *P. oblatum* Macbr. but differs in the scaly character of the peridium, in the shorter and brighter stalks without dark basal deposits, and especially in the dense capillitium, with its small, regular nodes, numerous lime-free junctions and conspicuous free ends.

ENTOMOLOGY.—*Synoptic revision of the United States scarab beetles of the subfamily Dynastinae, No. 5: Keys to tribes and genera.*[1] LAWRENCE W. SAYLOR, California Academy of Sciences.

This paper completes my studies covering a synoptic review of the United States dynastine scarab beetles, the preceding four parts having been published in this same JOURNAL.

A great deal of work, from a taxonomic standpoint, remains to be done in the American members of this tribe, especially in the Neotropical genera. Generic limits of such genera as *Ligyrus* and *Stenocrates*, as well as many others, must be thoroughly studied and the relative importance of such characters as the front male claws (enlarged or not), the dentition of the mandibles, and the usual sexual dimorphism must be better understood.

In the present studies I have had the cooperation of many institutions and individuals in obtaining material, or submitting material for identification: United States National Museum, through the courtesy of Drs. Wetmore and Chapin; the extensive collections of the California Academy of Sciences through its director Dr. Miller and its entomological curators Drs. Ross and Van Dyke; American Museum of Natural History through its curator Dr. Cazier; and many private individuals, among them Drs. Cartwright, Ritcher, Reinhard, and Sanderson, as well as Dr. Dampf of Mexico City. I have also received material from the Paris Museum through Dr. Paulian, and from the British Museum through Dr. Hinton and Mr. Arrow, to all of whom I am indebted for numerous past favors.

SUBFAMILY DYNASTINAE

Diagnostic characters.—Tarsal claws always *equal* in size, or at least so on the middle legs (one claw of the front pair is frequently enlarged in males of certain species); mandibles entirely corneous, and usually exposed beyond the clypeus (from dorsal view); mandibles frequently large and dentate externally; labrum hidden under the clypeus; clypeus more commonly acuminate apically, and dentate or edentate; scutellum normal, never greatly enlarged; sexes frequently dimorphic, the males frequently with tubercles or horns on either head or thorax or both, the females in many species likewise equipped; coloration usually some shade of black or brown, only very rarely with any metallic lustre; antennal club always relatively small and 3-segmented; ligula entirely connate with the mentum; abdominal spiracles diverging strongly behind; anterior coxae transverse, not prominent; stridulating organs frequently appear in many species, located on propygidium or inside the elytra; fifth ventral sternite and propygidium connate, the last spiracle on the suture between them; onychium between the tarsal claws commonly bisetose, varying to multisetose in certain genera.

KEY TO UNITED STATES TRIBES

1. Labial palpi inserted *behind* the mentum; body always *depressed* above; frequently with tubercles or horns on head or thorax; mid-disc of thorax often longitudinally impressed; hind tibia digitate or truncate at apex but not noticeably widened; first segment of hind tarsus with strong spine at apex; sexual differences hardly apparent. . . . . PHILEURINI

   Labial palpi inserted *at the sides* of the ligular part of the mentum; body never strongly depressed, usually evenly convex dorsally; head and thorax horned or not; sexual characters noticeable in last abdominal sternite or front tarsal claw in all instances. 2

2. Head and thorax in both sexes entirely *unarmed, without* tubercles or carinae or horns, and never depressed or foveate; claw with the onychium always bisetose (never more

[1] Received September 3, 1947.